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## Philosophical Background of Biological Classification (Modern and Islamic perspective)

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### Abstract

The study of living organisms is called biology. Biologist divide organisms into groups and subgroups. The branch of biology which deals with the description, naming, identification and classification of organisms is called Taxonomy. Philosophical background of modern science has a great and deep impact on a method of biological classification or Taxonomy. Quintessence of modern scientific philosophy is that evolution of life was driven by blind, forces without a goal, if God exists, He played no part in the process. On the other hand Islam has its own philosophy about origin, development, evolution and diversity of life. There is a lot of information provided by the Quran and hadith about groups and subgroups of organisms, about both botanical and zoological, which can provide basis for a new and separate biological classification system. Twenty basic rules of Biological Classification have been derived from the Qur'an & Hadith in our PhD thesis which provide the philosophical background of the Qur'an & Hadith based classification system. Only two of those have been discussed here in this article for example. Objective of this study is to explore the philosophical background of Biological Classification in modern and Islamic perspectives so that we can evaluate the future importance, sustainability and helpful ness of it for humanity. It can be concluded that the classification system based on the philosophy of classification derived from Islamic sources will be more sustainable, more helpful in the biological research for scientific facts. Descriptive method has been used in this research work. Where there is necessary figures have also been used.

**Keywords:** Biological classification, Taxonomy, Philosophy, Organisms, Renaissance, Botany, Zoology.

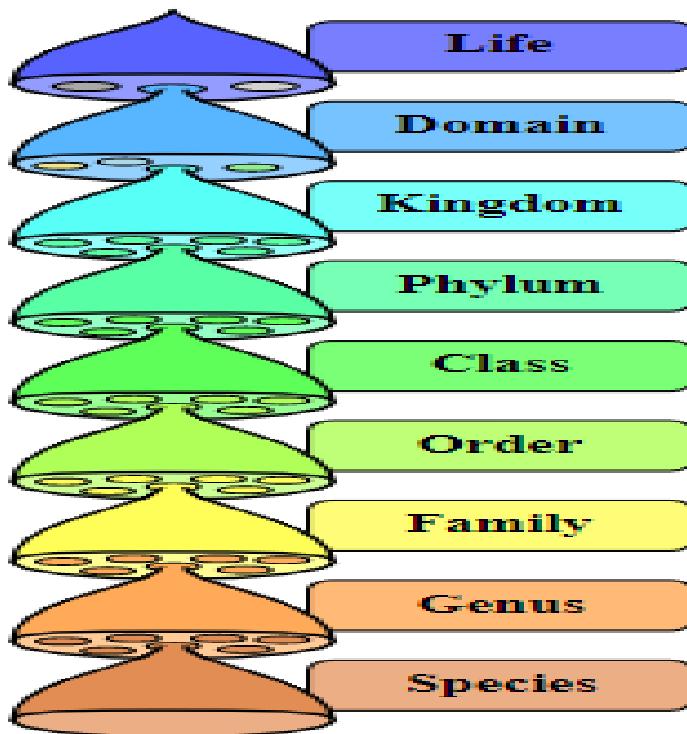
### Introduction

There is so much diversity of living organisms found on this colorful planet. Man has discovered about 1.9 million organisms yet, in which 13, 67,555 are animal species and 3, 21,212 are plant species. Algae, fungi and

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lichens are out of this numbering <sup>(1)</sup>. After the innovation of microscope a very vast range of microscopic organisms has been also discovered. According to an estimate about 46 new species per day were discovered in 2006 [\(1\)](#). The branch of biology which deals with the classification of organisms is Taxonomy. Taxonomy is the academic discipline of defining groups of biological organisms on the basis of shared characteristics and giving names to those groups [\(1\)](#). In modern Biological Classification System, organisms are initially divided into 'Kingdoms' (main groups), then kingdoms are divided into 'Phylums', Phylums are further divided into 'Classes' and subclasses, Classes are again divided into 'Orders' and suborders. Next subdivision is given the name 'Family', Family of organisms is further divided into 'Genus' and one Genus is comprised of resembling Species. Species is the basic unit of Biological Classification. Modern Biological System is comprised of seven levels of classification, each level is called 'Rank' and is represented in hierarchical forms.



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<sup>1</sup> A.D. Champan , *Number of Living species in Australia and the world (PDF)* (Canberra: Australia Biology Resources Study,2009), 1-80

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The philosophy behind the classification and grouping is resemblances among species. To fix resemblances there are three schools of thought, namely: Phonetics /Linnaean Taxonomy, Evolutionary Systematics/Darwinian Classification, and Phylogenetic Systematics/Cladistics. Phonetics believe in simple physical resemblances, Evolutionary Systematics believe in evolutionary changes, and Phylogenetic Systematics based on common evolutionary histories.

**Aristotle** (384-322BC)<sup>(2)</sup>, **Theophrastus** (371-287BC)<sup>(3)</sup> are said to be ancient taxonomists. There is no place of Muslim biologists and taxonomists in the modern 12-era written history of taxonomy. After **Theophrastus**, a very long jump reaches to **Carolos Linnaeus** (1707 – 1778)<sup>(4)</sup>, who is known as “Father of Taxonomy”. Linnaeus gives two kingdom system of biological classification and also he is founder of “Binomial Nomenclature”. After him **Ernst Haeckel** (1866)<sup>(5)</sup> gave “three kingdom system”, **F. Copeland** (1938)<sup>(6)</sup> suggested “four kingdom system”, **Van Niel** (1960)<sup>(7)</sup> proposed “Two empire system” **Robert Whittaker** (1969)<sup>(8)</sup> gave “Five Kingdom system”. In 1977 **Woese et-al** <sup>(9)</sup> Suggested “Six Kingdom System” and in 1990 he again changed his “Six kingdom

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<sup>2</sup> Mother Nature Network, “9 Newly Discovered species.” Accessed april 03,2017.  
<http://www.mnn.com/9-newly-discovered-species>.

<sup>3</sup> Rock Holding Inc “Taxonomy” Accessed April 12,2017  
<http://dictionary.com/Taxonomy>

<sup>4</sup> E Mayr, *The growth of Biological thoughts (PDF)*, (Cambridge: Belknap P. of Harverd U.P. ,1982) ,149.

<sup>5</sup> Charles Singer, *A short History of Biology: A general Introduction to the study of Living things(PDF)*, (London: Oxford Clarendon Press ,1931) 132.

<sup>6</sup> M. Manktelow “History of Taxnonmy, Lecture fram Dept. of systematic Biology.” Accessed May 10,2016. <https://www.uppsas%20university.atbi.eu/summerschool/files/manktelar.syllabus.pdf>.

<sup>7</sup> M.A Donk, “Typification and Letest starting Points (PDF)” *International Assoication for Plants* Accessed June 02,2016. <http://lapt-taxon.org/Taxon> 6:242-256

<sup>8</sup> Joseph M.Scamardella, “No of Plants or Animals: A Brief history of the Origin of Kingdom Protozoa, Protista and Protocitista” Pubmed.gov (Dec.1999) : 2(4) : 207-16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC138333/>

<sup>9</sup> Ibid

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system” to “Three Domain System”. **Covalier Smith**<sup>(910)</sup> in 1993 proposed “eight kingdom system” and he again changed it into “Six Kingdom System” in 1998. In 2005, **International Society of Protistologists**<sup>(11)</sup> gave a totally new classification system, society even rejected the conventional kingdom system completely. Modern taxonomic system has been set its aims, basis and hierarchy of classification. Search of **“Most Recent Common Ancestor”** or **MRCA** is an important aim of modern biological classification<sup>(12)</sup>. Also search for similarities & differences between different species after comparing is another aim of classification. **Phonetics, Evolutionary Systematics and Phylogenetic Systematics** are there schools of thoughts of modern

Biological classification<sup>(13)</sup>. On the other hand, when we recite the Qur'an and Hadith in which concept of biological classification, basis of classification, basic definition of plant and animal, description of microscopic organisms, classification groups or taxa of plants and animals are described and discussed. There are the areas in which the Qur'an and Hadith are agreed with modern biological classification and also there are many areas in which the Qur'an and Hadith are disagreeing with modern classification.

The Holy Qur'an describes 29 animals species names and 18 plants species with names. There have been found 61 species names of different plants only in two books with reference to Hadith.<sup>(14)</sup>

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<sup>10</sup> R.Y. Stanier and Van Neil, “The concept of a Bacterium.” .Archive for Microbiology, Pubmed.gov (1962) : (42 (1) : 17-35. Accessed June 04,2016. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC138333/>.

<sup>11</sup> R.H Whittaker, “New concept of Kingdoms; Evolutionary Relations are better represented by new classifications than by Traditional two Kingdoms. Science (January 1963) :163(3863) 150-160. Accessed June 06,2016. <https://www.science.org/doi/10.1126/science.1334803>.

<sup>12</sup> C.R Whose, “Phylogenetic Stucture of the Prokaryotic Domain: The Primary Kingdoms.” Proceedings of the National Academy of science USA (Nov. 1977): 74(11)5088-90.

<sup>13</sup> International of Society of Protistolsists USA. ” *Kingdom (Biology)*. ” Accessed April 03, 2015. <https://www.protistologists.org>

<sup>14</sup> Glenn E. Moulton, *The complete Idiot's Guide to Biology*, (USA: Alpha Books a member of Penguin Group Inc., 2004) Accessed Feb.02, 2020 <https://www.infoplease.com/math-science/biology/genetics-evolution> .

### Three Schools of Thought of Classification:

There are many schemes and methods of biological classification among biologists, but following three schools of thought about classification are important and famous.

- i. Phonetics (or Numerical Taxonomy or Linnaean Taxonomy).
- ii. Evolutionary Systematics (or Synthetic Taxonomy or Darwinian Classification)
- iii. Phylogenetic Systematics (or Cladistics)

#### Phonetics (or Numerical Taxonomy or Linnaean Taxonomy):

It is a school of thought of biological classification, started by Carolus Linnaeus (1707-1778 A.D). In phonetics, grouping of organisms is simply based on what looks similar from one organism to the next. It is based on visible similarities. It is an attempt to understand God's design. <sup>(15)</sup>

#### Evolutionary Systematics (or Synthetic Taxonomy or Darwinian Classification):

Another school of thought is evolutionary systematics or Synthetic Taxonomy. It is also called Darwinian Classification. It is a branch of biological classification to classify organisms using a combination of phylogenetic relationships and degree of evolutionary changes.

This type of taxonomy considers taxa rather than species, so that groups of species give rise to new groups. <sup>(16)</sup>

#### Phylogenetic Systematics (or Cladistics):

Cladistics or Phylogenetic Systematics is third school of thought of biological classification. Cladistics is an approach to biological classification in which organisms are grouped together based on whether or not they have one or more shared unique characteristics that some from the group last common ancestor and are not present in more distant ancestors. Therefore, members of the same group are thought to share a common history and are considered to be more closely related. <sup>(17)</sup>

### Basis of Modern Biological Classification:

Base is a conceptual structure or entity on which something draws or depends. <sup>(18)</sup> So basis of biological classification means that entities, things,

<sup>15</sup> ibid

<sup>16</sup> Creighton Smith "Comparison of Differing Methods of Biological Classification Schemes." Accessed May 12, 2015. <https://biology.knoji.com/camparision-of-differing-methods-of-biological-classification-schemes>.

<sup>17</sup> E. Mayr, *Classification and other Ordering System*, 40 (4) : 169-194

<sup>18</sup> UCMP. "Cladistics".

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concepts or processes which biologist use to classify organisms in different groups and sub-groups.

Classification is based on relationship amongst organisms and such relationship is got through similarities in characteristics.

Before Linnaeus, Classification system was based on the similarities of living habitats. Animals were categorized into three groups. Those that lived in water, on the land, and in the air, Linnaeus based his system of qualification upon similarities of structure and function between different organisms.<sup>(19)</sup>

To find and search these similarities biologists use many tools/methods/ways, which can be described one by one as follows.

- Finding similarities of structure and function
- Finding evolutionary life histories by using theory of evolution
- Using genetics and evolution theory for finding shared set of traits
- Using paleontology for creating classificatoonal space of extinct species
- Using embryology for finding shared set of traits among organisms.

### **Philosophical background of modern biological classification:**

- Philosophical background of Modern Biological Classification is Godless or non-intervenal God. The western concept of God and western belief system has too much impact on modern biological classification. Modern biologists' belief has been brewed form Greek philosophy to Darwin's Evolution Theory.
- Renaissance, Actually was a movement against firm grip of church on society, religion and politics.
- These were Greek Philosophers who lead to Renaissance. After fall of Constantinople by Muhammad II in 1453 A.D, Greek intellectuals left Constantinople and entered into different cities of Italy and it were their teachings which originate the Renaissance.<sup>(20)</sup> As a result new literature, new art, and new science developed.<sup>(21)</sup>

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<sup>19</sup> Lauren Geross, Dr. Max Fogiel and James R. Ogden, *High School Biology Tutor* (USA: Research & Educationael Association, 1993), 22.

<sup>20</sup> Hostory Discussion “History of Europe Renaissance in Eupre : Meaning, Cousos and results of Renaissancs. Accessed.” July 15,2015.

<sup>21</sup> <https://histoydiscussion.net/history-of-europe/renaissance-in-europe-meaning-causes-and-reuslts-of-renaissance/1941>.

More citizen became interested in politics. <sup>(22)</sup> Reason, observation and experimentation became more and more popular as a result of teachings of Peter Abelard, Roger Bacon, Francis Bacon, Copernicus, John Kepler and Galileo. <sup>(23)</sup> Church's strict opposing behavior to reasoning, experimentation and new thoughts more triggered to Renaissance. New science's basis were only on reason, observation and experimentation. Philosophy of ancient Greek.

Philosophers like Plato and Aristotle became more and more popular. Religion, revelation, and God became more and more irrelevant to new scientific approach.

### Main Points of Greek Philosophy about God:

- God is not solely old and eternal. He is not creator of concepts (or perception and ideas) and material. Concepts and material are also old and eternal. (Plato).
- God uses eternal forms, or archetypes, to fashion a universe that is eternal and uncreated. (Plato) <sup>(24)</sup>
- The order and purpose that God gives the universe is limited by the imperfections inherent in material. (Plato) <sup>(25)</sup>
- God is not the author of everything. (Plato) <sup>(26)</sup>
- God is unaware of the world and cares nothing for it, being an unmoved mover. (Aristotle) <sup>(27)</sup>
- As an immaterial being, God is not extended into space. (Aristotle) <sup>(28)</sup>
- God is the source of the universe. The universe comes out of God (ex deo) in a timeless process, it does not come by creation. God is an impersonal. (Platinus) <sup>(29)</sup>
- God caused the universe but did not intervene thereafter. (Deism) <sup>(30)</sup>
- Reason is the main source of knowledge. (Aristotle)

<sup>22</sup> Ibid

<sup>23</sup> Yahoo Answer. "Result of Renaissance." Accessed July 15,2015. <https://answer.yahoo.com/results-of-renaissance>. "History Discussion".

<sup>24</sup> Internet Encyclopedia of Philosophy."Western Concept of God." Accessed July 14,2015. <https://iep.utm.edu/god-west/>.

<sup>25</sup>Ibid

<sup>26</sup>Ibid

<sup>27</sup>Ibid

<sup>28</sup>Ibid

<sup>29</sup> "Western Concept of God".

<sup>30</sup>Ibid

- Reason must judge whether a supposed revelation is true. (John Locke)

### **Origin of Life: Modern Scientific View:**

Modern scientific view about origin of life and biological classification rely upon evolution theory. According to modern scientists and biologists:

“Evolution was driven by blind, unguided natural forces without a goal. Darwin’s belief that naturally occurring differences among offspring lead to evolution of the species through natural selection is the main or perhaps the only driving principal behind evolution; if God exists, He played no part in the process.”

One can see the echo of Greek Philosophy in modern scientific view about origin of life.

### **Biological Classification and Islamic Literature:**

In Islamic history of more than 1400 years there is not a single book available directly in this topic. Biological classification or taxonomy has not been a topic of discussion among Islamic scholars. In *Tafsīrī* literature discussion about this topic is very less and interspersed, strewn and scattered. Some discussion is available under topics of halal, haram. Examples were mentioned here:

Imām Rāzī and Ibn Kathīr discussed in their “*Tafsīrī*” about animals having clowns, bigger body animals, animals lying on earth, cattle etc. A few facts about biological classification can be derived from these discussions.

Al-Jāhiẓ wrote a book “*Al-Hayawānī*” about description of animals. This book provides very interesting and informing knowledge about different species of animals separately but there is no special discussion of biological classification

Allāma Kamāl-u-Dīn Al-Damīrī’s book “*Hayāt-ul-Hayawānī*” is very informative about animal species. Some rare discussion about biological classification is also available in this book but this book is also empty from special discussion of biological classification with respect to the Qur’ān and Hadith.

Allāmah Ibn-ul-Qayyam Al-Jozīa described plant species with reference to Hadith in his book “*Tibb-i-Nabvī*” but Biological classification discussion is not available.

Books “*Al-Nabātāt*” & “*Al-Hayawānī*” of Jābir bin Hayyān and Abd-ul-Mālik Asmaī’s books Al-Ibil, Al-Khīl, Al-Wohūsh and Khalq-ul-Insān also provide some basic information about life and medical use of different animals and plants.

## Philosophical Background of The Qur'an Based Biological Classification w.r.t Two

### Basic Rules:Defining Basic Unit of Classification (i.e. Species) in Light of The Qur'an:

The Qur'an Says:

سُبْحَانَ الَّذِي خَلَقَ الْأَزْوَاجَ كُلَّهَا بِمَا تُنْبِتُ الْأَرْضُ وَ مِنْ أَنفُسِهِمْ وَ بِمَا لَا يَعْلَمُونَ<sup>(31)</sup>

“Glory be to Him Who created everything in pairs of those the earth grows and of themselves as well and (more ever) of the things they do not know”.

This verse is giving the following points:

- i. All organisms, which earth grows (seed-grain germinating, seed-stone germinating and spore-germinating organisms) are created in pairs (i.e. male & female).
- ii. Human (and animals) are also created in pairs.
- iii. The organisms which are still unknown to mankind are also in pairs (they are macro-organisms or micro-organisms).

The Qur'an also says another place:

وَ مِنْ كُلِّ شَيْءٍ خَلَقْنَا زَوْجَيْنِ لَعَلَّكُمْ تَذَكَّرُونَ<sup>(32)</sup>

“And of everything we have created two pairs so that you may concentrate and understand.”

This verse is telling us following facts:

- i. Everything (living or non-living) has been created in pairs.
- ii. For living organisms pairs meaning is definitely male and female and for non-living meaning of pair may be different.

The Qur'an says also:

فَلَنَا أَحْمَلْنَاهَا مِنْ كُلِّ زَوْجَيْنِ اثْنَيْنِ وَ أَهْلَكَ<sup>(33)</sup>

“We said: (O Nūh [Noah],) place aboard the Ark a pair of (male & female) of every species, and (take in) your family”.

Following points may infer from this verse:

Hadrat Nūh (Noah) had placed aboard the Ark with pair of each species. These species were animals (vertebrates & invertebrates) according

<sup>31</sup> Al-Qur'an 36: 36

<sup>32</sup> Al-Qur'an 51: 49

<sup>33</sup> Al-Qur'an 11: 40

to some references <sup>(34)</sup> and also include plants seeds, roots and cuttings according to some other reference. <sup>(35)</sup>

It is evident that purpose of placing aboard these species in the Arc was definitely to save their generations and continuity of offspring chain. So, they should have been able to produce offspring continuously generation after generation. This purpose may be fulfilled only by fertile offspring which may breed in nature.

Now from above discussion, one can define the basic unit Zowj (زوج) of organismic classification in light of the Holy Qur'an as:

### **Definition of Zowj (زوج) i.e. Species:**

"A 'Zowj' (زوج) (i.e. species) is a group of organisms which found in pairs (male & female) which can interbreed among themselves and produce fertile offspring, generation after generation naturally, no living body is there without its male or female partner".

**Note:** Another word used in the Qur'an and Hadith for a species concept is Ummah (عما), so one can also use the word Ummah (عما) in place of Zowj (زوج).

### **Modern Definition of Species:**

"A species is a group of organisms which can interbreed freely among them and produce fertile offspring, but are reproductively isolated from all other such groups in nature." <sup>(36)</sup>

### **Discussion:**

One can see that modern definition of species is very close to the Qur'anic teachings. So one can say that modern science is going to right way in case of species definition.

The Qur'an says that all living bodies are in pairs (male & female) but modern science tells that single-celled organisms, few parthenogenetic or apomictic multi-celled organisms (phylotypes), hybridized organisms and ring-species are not found in pairs and their way of production is asexual. <sup>(37)</sup>

But, in this regard it will be said that modern science is still in way and not reached to the final reality. At the end science will find that all the living organisms are in pairs. Now, some scientists are also telling their

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<sup>34</sup> Abu-ul Mustafa Mujahid, *Biographies of Prophets and Their Natains* (Urdu) (Lahore: Akbar Book Sellers ,2013) ,1:696.

<sup>35</sup> Syed Saeed Ali, *Qasas-ul-Anbya* (Lahore : Shabbir Brothers, 1988) ,47.

<sup>36</sup> Dr. William, *Biology* ,34.

<sup>37</sup> Templeton, *Meaning of Species and Speciation*,3-27

research that single-celled organisms like bacteria also have sex relations. Two arguments are in the following.

“Despite their asexual mode of reproduction, bacteria have sex, or at least something that is referred to as sex and can be defined as the inheritance of DNA from any source aside form the parental cell.”

“Bacteria conjugation” is the transfer of genetic material between bacterial cells by direct cell-to-cell contact or by a bridge-like connection between two cells.

“Bacterial conjugation is often regarded as the bacterial equivalent of sexual reproduction or mating since it involves the exchange of genetic material.”

### **Superior Organisms or ‘King Species’ Concept in The Quran: Allah’s Way of Describing Selected Organisms (especially vegetation):-**

When a person read and consider all the verses in which Allah Almighty has described the selected vegetation organisms then he can found that this description is not random, only rhythmic or only fascinating but it is very meaningful, ordered and should deeply be understood. When Allah Almighty describes enumerating His blessings on mankind like grapes (عنب), date palm (نخل), olive (زيتون), pomegranate (رمان), then He is not describing only one organism but it has very deep meanings. This description is not ordinary but special. Findings are as under in this regards:

#### **Selection of a “King Species” or Superior Organism:**

Allah Almighty chooses the best representative organism in a group of species because when He describes His blessings then He selects the best one from a group of species. So when He describes His blessings of grapes (عنب) then it does not mean only one organism or species “grapes” but it means that all the species like “grapes characteristics” include in “عنب” from which grape is the best species. It can be said that Allah Almighty selects the “King species” of that group of species for His description.

1. Here, superior means which is more beneficial and good looking to mankind as compared to other organisms. Beneficiality and good looking includes:

- (a) Its shape & colour beauty      (b) Its benefits as a food item
- (c) Its fragrance                          (d) Its goodness (طيبة)
- (e) Its medical benefits

An organism possessing more beneficial characteristics will be superior than other organisms.

### **Division of a Group w.r.t “King Specie”.**

When Allah Almighty selects a “King Species” from a group, then He divides that group with reference to that “King Species” generally into three types:

- |      |                |                         |
|------|----------------|-------------------------|
| i.   | Resembling     | (Nearly resembling)     |
| ii.  | Doubtful       | (doubtfully resembling) |
| iii. | Non-resembling | (far resembling)        |

#### **i. Exculpation of Inferior Species:-**

Allah Almighty generally enumerates and selects the best one & superior species and groups for description, and minimumly describes the inferior species or groups, but mostly exculpate the inferior species and groups in description.

#### **ii. Terminology:-**

The biological classification described by Allah Almighty has its own terminology and every word has special meanings, generally this classification is separate from now a days setin classification.

#### **iii. Based on Apparent Characteristics:**

The Qur’anic described classification is generally based on apparent characteristics of species.

#### **iv. No Evolution but Devolution Proofs are Available:**

There is no apparent proof or argument of “evolution” found in the Qur’an, but some proves of “Devolution” are available in the Qur’an. It also seems that Allah Almighty creates the best one (or king species) of a group first of all and then devalues its inferiors in next steps. So, He is creator of the bests first of all. We can say that there is no evolution but devolution is the reality, and modern scientists and biologists should change their direction of research from evolution to devolution.

#### **v. Use of “Min” (من):-**

In the Qur’an, when Allah Almighty uses the letter من (from) with an organism then mostly this is “Min Tab ‘idāh” (من تبعيضيه). In English you can say that this use of “from” is not descriptive but this “from” is partial.

#### **vi. No Use of Synonyms in the Qur’an.**

There is no use of synonyms in the Qur'an. Every word has its own special meanings. When one fix or determine a word of the Qur'an as synonym of the other the Qur'anic word then it is result of his lack of knowledge, study and consideration.

#### **vii. How to Find Meaning of the Qur’anic Words:**

The traditional way of determining meaning of a Qur’anic word with help of old Arabic language (lexicon), poetry and Arabic traditions is not

wholly solely helpful but helpful to some extent. One can fix the exact meaning of a word only with help of other verses of the Qur'an and its use in the Hadith.

### viii. Need of the Qur'anic Dictionary:

A Qur'anic word dictionary is necessary which describes the meanings of word only derived from the Qur'an and Hadith.

### ix. Representative Species:

In the Qur'anic sense grape (عنب), date palm (نخل), olive (زيتون) etc are "King Species" of their groups and are representative of a group of organisms or species. So when we read these words in the Qur'an, we should not understand these as a single tree/species but should search for that group.

Some arguments about above findings are as under:-

### x. Arguments:-

Allah Almighty says in the Qur'an:

وَ هُوَ الَّذِي أَنزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجَنَا بِهِ نَبَاتٍ كُلُّ شَيْءٍ فَأَخْرَجَنَا مِنْهُ حَضِيرًا تُخْرِجُ مِنْهُ  
حَبَّاً مُتَّكِبًا وَ مِنَ النَّحْلِ مِنْ طَلْعِهَا قِنْوَانٌ ذَائِيَةٌ وَ جَنَتٌ مِنْ أَعْنَابٍ وَ الرَّيْنُونَ وَ الرُّمانَ مُشَتَّبِهَا وَ غَيْرُ  
مُشَتَّبِهِ طُ اُنْظُرُوا إِلَى ثَمَرَهُ إِذَا أَثْرَ وَ يَتَعَهِ ط إنَّ فِي ذَلِكُمْ لَذِكُرٌ لِّقُومٍ يُؤْمِنُونَ<sup>(38)</sup>

"And He is the one Who sends down water from the sky. Then by means of this (rain), we bring forth vegetation of every kind but of which we produce green (foliage) from which we bring forth clustered grain packed one over the other, clusters of date-palm hanging low from its spathe, and gardens from grapes, olives and (also) pomegranates( which from many aspects look) alike (doubtfully alike) and unlike. Look at the fruits of the tree when it bears fruit and (also observe) when it ripens. Verily, in these are signs for those who believe."

وَهُوَ الَّذِي أَنْشَأَ جَنَتٍ مَعْرُوفَةٍ وَ غَيْرَ مَعْرُوفَةٍ وَ النَّحْلُ وَ الرَّيْنُونَ وَ  
الرُّمانَ مُشَتَّبِهَا وَ غَيْرُ مُشَتَّبِهِ<sup>(39)</sup>

"And He is the One Who has Produced trellised and untrellised gardens (i.e. plants climbing up with supports and those not climbing up) and also (created) date (palms) and vegetation with a wide variety of fruits and olive and pomegranates (that resemble but differ).

" From above two verses following points may be inferred clearly:

<sup>38</sup> Al-Qur'an 6:99

<sup>39</sup> Al-Qur'an 6:141

## Some Important Inferences:

### (i) Order of Organisms in Surah Al-An‘ām (Verse 99 & 141)

Allah Almighty has described an order of organisms first of all. He describes that نبات (growing creatures) is the main group of organisms from which He brings forth خضرا (green vegetation) and then from green vegetation He brings forth clustered grains packed one over the other حبا (). It should be noted that here the use of من (from) is partial تبعيسيه ().

### Date-palm, Grapes, Olive, Pomegranate are Representatives:

In the next step, Allah Almighty describes date palm نخل is representative of a group of trees or species from which date-palm نخل is the most superior and best. Same is the case with grapes عنب, Olive زيتون and pomegranate رمان. Allah Almighty has not used جنت الاعناب (gardens of grapes) or جنت الرمان (gardens of olives) or جنت الزيتون (gardens of pomegranates), but has used جنت من اعناب والزيتون والرمان (gardens from grapes and olives and pomegranates). Now the importance of use of من (from) is obvious here. Many other verse also describe the same sense.

### Resembling Species:

In first verse Allah Almighty has described two words مشتبها (doubtfully resembling) and غير متشابه (not-resembling). In second verse Allah Almighty used word متشابهها (resembling) and غير متشابهها (not-resembling or far-resembling), so three words are used here in these verse in describing types of “King Species”, i.e. مشتبها (resembling), مشتبها (doubtfully resembling) and غير متشابهها (not-resembling or far-resembling).

In all the translation of the Qur'an there has not been taken any difference between متشابهها (resembling) and مشتبها (doubtfully resembling) which should be noted and corrected.

### New System of Classification

Above two verses describe a new system or process of biological classification in the light of words of Allah Almighty, which may be described as following:

In all groups of organisms (especially in herbage), first of all search for a “King Species” and fix it.

- Then divide the remaining species of that group in three types.
  - Closely resembling
  - Doubtfully resembling
  - Far-resembling or non-resembling
- When there is very very less resemblance then make a new group of species and search for its “King Species”.

- “King Species” should be the best of all in benefits, fruit taste, odour and other things. The best of fruit taste and having more benefits than other should be fix as “King Species” in case of herbage.
- In case of animals’ biological classification, these principles may also be use-full but it needs a further and separate research work for applying these principles on animal’s classification.

### **Principles of Classification:**

In first verse, Allah Almighty also give instructions that how should a species be classified by saying “Look (and observe) at the fruits of the tree when it bears fruit and (also observe) when it ripens.”

From this saying following instruction for classification of herbage may be obtained:

- Fruit of any herbage should be observed carefully in classifying a specie.
- One should observe two stages of fruit with deep sight:
  - Fruit bearing stage
  - Fruit ripening stage
- All the herbage which have resembling fruit bearing and ripening stages should be kept in one group.
- All the other characteristics should be observed and included in next step of classification.

### **Importance of Seed type in Classification:-**

In the light of the Qur'an, seed type is very important for fixing main groups of classification. The Qur'an described two main types of seeds:

Al-Habb (الحب)      i.e.      seed-grains

An-Nawā (النوى)      i.e.      seed-stones

So, two main groups of herbage should be Zul-Habb (ذوالحب) i.e. seed-grain-germinating herbage and Zun-Nawā (ذالنوى) i.e. seed-stone-germinating herbage. Its details will be discussed later.

### **Importance of Stem in Classification:**

Allah Almighty also classifies herbage on the basis of trunk or stem types, shape and size (we will discuss it later). So in the light of the Qur'an, during classification of herbage one should consider seed types, fruit bearing and ripening and as well as stem type.

### **Some Representations:**

It should be understand that some the Qur'anic trees (or herbage) have the following representations:

- **Inab (عناب)**

i.e grapes represents all the vines (creepers or climbers) whom the Qur'an says “Marooshat” (المعروف شات) and “gher-marooshat” (غير معروف شات).

- **Zetūn (زيتون)**

i.e olive represents all such types of trees which grow from seed-stone and generally have non-sweet fruits and their stem is branched and leafy.

- **Nakhal (نخل)**

i.e date-palm is representative of trees which have bared, non-branched and long stems.

- **Rummān (رمان)**

i.e. pomegranate represents all such types of trees which grow from seed-grain and have bending branches like whip or bending with heavy load of fruits on branches. Pomegranate itself is probably the heaviest fruit which is attached to branch of tree directly not on other structures and arrangements (its further discussion is ahead). Rumman (رمان) is itself a sub-division of the Qur'anic term "Qabhb" (قضب).

- **Qadab (قضب)**

is a special group of herbage described in the Qur'an and it comprises of all such trees which grow from seed-grains not from seed-stones. It will be discussed in detail on its place ahead.

- **Abb (اب)**

is also a special group of herbage which represent all soft fleshy stem herbage like grasses, fodders and soft stem flowering plants.

**Note:** Here only two principles out of twenty have been discussed as an example which were derived from the Qur'an & Hadith for Biological Classification in our PhD thesis "Exploring Zoological Classification in The Light of the Qur'an & Hadith". This gives an idea of how sustainable and excellent a system derived from the Qur'an can be.

### Conclusion:

It can be concluded that modern Biological Classification system will not be sustainable due to its weak philosophical foundations. It has changed in the past and will continue to change in the future, while the classification system based on the philosophy of classification derived from Islamic sources will be more sustainable, more helpful in the biological research for scientific facts.



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